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ABSTRACT

Using the U.S. Census definition of poverty, an attempt was made to determine: how many poverty level South Dakota families there were in 1970 and where they resided; the socioeconomic factors explaining county differences in poverty incomes; whether those factors explaining poverty incidence would correlate with county differences in the extent of migration between 1960 and 1970. Classifying residents as rural farm, rural nonfarm, and urban, a determination was made of poverty level families in each county (number and percentage). Characteristics (62 variables) measuring county population by age and sex, numbers of males and females employed by occupational categories, income, and educational and marital status for the 3 sectors were examined, and then 10 of these variables were examined in terms of migration. Results indicated: the incidence of disadvantagement was greatest in rural farm and rural nonfarm areas; family disadvantagement for the county as a whole prevailed in most of South Dakota; 1970 family disadvantagement was primarily a consequence of families with a female head and concentrations in the male labor force of farm managers and operatives; high outmigration between 1960 to 1970 was due to a high proportion of families with female heads and low employment for rural farm males either in high income employment sectors or as farm managers and operators. (JC)

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South Dakota Low Income Families and Migration

Rural Sociology Department
Agricultural Experiment Station
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SOUTH DAKOTA LOW INCOME FAMILIES AND MIGRATION

by

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INTRODUCTION

From 1960 to 1970, South Dakota lost a net population of 14,257 persons, a decline of 2.1%. This loss occurred despite the fact that 78,303 more persons were born than died during the same period. This decline of 14,257 persons, then, means that South Dakota lost 92,560 persons (13.6%) due to out-migration during the 1960s.

The number of South Dakota families reporting an income below $5,000 generally decreased from 1960 to 1970. Families with an income below $1,000 made up 9.4% of the population in 1960. By 1970, this same category had decreased to 3.2% of the total families in the State. During the same period, the percentage of families with an income between $1,000 and $5,000 decreased from 50.2% in 1960 to 26.7% in 1970. By comparison, the percentage of families with an income of $15,000 or over increased from 2.2% in 1960 to 11.6% in 1970. This near-five-fold increase was attributed partially to inflation.

In attempting to understand why the population experienced a net loss while family income tended to increase, one might ask: "Who left the State? Why did they leave?" The answers to such questions suggest that the population decrease during the 1960-1970 decade may best be explained as the out-migration of low income families. If such were the case, it would be contrary to general demographic research findings that low-income persons are less prone to migrate than high income persons.

Objectives of the Study

Generally, a high proportion of out-migrants are believed to be persons who leave because of limited economic opportunities in the State for the skilled, the educated, underemployed or the unemployed members of the labor force. Often, underemployed and the unemployed are members of disadvantaged families; that is, families characterized by income levels not adequate to provide minimum living standards. Consequently, it is believed that areas of a rural state with extensive concentrations of poverty level families may be areas of low employment opportunities, and consequently areas of high out-migration.

For this study, poverty level families are those households with incomes below poverty level, as defined by the United States Bureau of the Census. Primarily, income is the major determinant of poverty status; however, the specified income minimums vary according to rural-urban residency, marital status, and number of dependents. Table 1 shows typical poverty levels by

household and residence. Poverty level families are often referred to as disadvantaged families, and counties or households with high levels of poverty are referred to as areas or units of disadvantagement.

Table 1.--Eligibility Criteria for Classification of Poverty

Size of family	Total	Nonfarm			Farm		
		Total	Male head	Female head	Total	Male head	Female head
All unrelated individuals	$1,834	$1,840	$1,923	$1,792	$1,569	$1,607	$1,512
Under 65 years	1,888	1,893	1,974	1,826	1,641	1,678	1,562
65 years & over	1,749	1,757	1,773	1,751	1,498	1,508	1,487
All families	3,388	3,410	3,451	3,082	2,954	2,965	2,757
2 persons	2,364	2,383	2,394	2,320	2,012	2,017	1,931
Head under 65 years	2,441	2,458	2,473	2,373	2,093	2,100	1,984
Head 65 years & over	2,194	2,215	2,217	2,202	1,882	1,883	1,861
3 persons	2,905	2,924	2,937	2,830	2,480	2,485	2,395
4 persons	3,721	3,743	3,745	3,725	3,195	3,197	3,159
5 persons	4,386	4,415	4,418	4,377	3,769	3,770	3,761
6 persons	4,921	4,958	4,962	4,917	4,244	4,245	4,205
7 or more persons	6,034	6,101	6,116	5,953	5,182	5,185	5,129

Using the Census definition, this study attempted to determine:

1. How many families there were in South Dakota in 1970 with incomes below poverty level, and where they reside.

2. What socioeconomic factors help explain differences from county to county in the number of families with incomes below poverty level in 1970.

3. Whether factors that help explain the incidence of families with below poverty level incomes also help explain differences in the extent of migration for the counties in South Dakota from 1960 to 1970.

Information pertinent to this question will help identify and characterize concentrations of low income families in South Dakota. Furthermore, research in this area will provide helpful information to planning, regulative, and ameliorative agencies concerned with poverty programs and migration patterns to and from South Dakota.

GENERAL FINDINGS

Number and Distribution of Low Income Families

The first objective of this study was to determine the number and geographical location of families with incomes below poverty level in South Dakota in 1970. For reporting purposes, the number and percentage of families residing on farms as farm operators, in small towns under 2,500 population or in open country as nonfarm operators, in urban places with 2,500 or more inhabitants, and for the county as a whole was determined for each county.[1]

After the percentage of low income families was determined for each county residential category, the counties were arranged by name in descending rank order, the county with the highest percentage of low income families in the respective residential category listed first and the county with the lowest percentage listed last. Quartile divisions for each residential category were determined, dividing the rank ordering into four groups.[2] Counties falling into the various quartiles were classified as follows:

1. Upper quartile: Major poverty areas
2. Upper middle quartile: High poverty areas
3. Lower middle quartile: Moderate poverty areas
4. Lower quartile: Low poverty areas

---

[1] Four demographic terms are used regularly in this report. For clarification, the terms are defined as follows:

Rural Farm Residents. Individuals who live on farms as full or part-time farm operators. Specifically, the rural farm population includes all persons living on places of 10 or more acres from which sales of farm products amounted to $50 or more in the preceding calendar year or on places of less than 10 acres from which sales of farm products amounted to $250 or more in the preceding year.

Rural Nonfarm Residents. All individuals who reside in towns of less than 2,500 population or in open country, but who are not farm operators as defined in the preceding paragraph.

Urban Residents. Individuals who reside in towns or cities with a population of 2,500 or more, or in unincorporated urban areas designated as such by the Bureau of the Census.

Family. A group of persons consisting of a household head and one or more persons living in the same household related to the head by blood, marriage, or by adoption.

[2] The corresponding value for the State as a whole for each rank-ordered residential category was inserted in the descending array, thereby dividing it into two halves. The upper half and lower half of the array were also divided into two parts by calculating the difference between the highest score and the value for the State as a whole and the lowest score and the value for the State as a whole. These differences were then halved. The resulting values become the quartile division points.

Low Income Rural Farm Families. In 1970, 20.1% of the rural farm families in South Dakota had incomes less than poverty level. Table 2 rank-orders and groups counties according to the percentages of rural farm families having incomes less than poverty level. The percentage of low income rural farm families for each county ranged from 37.1% for Shannon County to 0.00% for Stanley.

Table 2.--Number and Percentage of Rural Farm Families with Incomes Less Than Poverty Level, Rank-ordered and Grouped by County According to Percentage

County	Percent	Number	County	Percent	Number
Major Poverty Area					
Shannon	37.1	95	Haakon	29.7	85
Charles Mix	33.0	330	Aurora	29.5	157
Day	33.0	300	Gregory	29.4	209
Yankton	31.4	289	Hutchinson	29.0	318
Dewey	31.1	112	Hughes	29.0	60
McCook	30.8	286			
High Poverty Area					
Ziebach	28.2	79	Todd	23.0	65
Brule	27.4	143	Bon Homme	22.4	201
Washabaugh	26.8	49	McPherson	22.0	117
Corson	26.7	113	Perkins	22.0	126
Jerauld	26.6	102	Grant	21.9	186
Hyde	26.5	68	Lake	21.3	187
Marshall	24.3	158	Brookings	21.2	261
Bennett	23.9	62	Hand	21.1	143
Sully	23.7	70	Miner	20.6	131
Douglas	23.6	138			
Moderate Poverty Area					
Lincoln	19.8	259	Lawrence	16.0	72
Butte	19.8	103	Pennington	15.8	97
Harding	19.2	64	Clark	15.7	130
Union	18.9	168	Campbell	15.5	49
Tripp	18.4	157	Potter	15.4	55
Edmunds	18.3	113	Spink	15.2	158
Beadle	18.2	196	Buffalo	15.1	24
Moody	18.0	162	Faulk	15.0	62
Sanborn	17.9	96	Lyman	13.9	54
Roberts	17.8	236	Minnehaha	13.6	226
Hanson	17.6	96	Brown	13.4	168
Deuel	17.5	152	Meade	12.8	89

Table 2 continued.

County	Percent	Number	County	Percent	Number
Davison	17.4	96	Jackson	12.3	15
Turner	17.0	216	Hamlin	10.7	65
Walworth	16.7	61	Codington	10.2	80
Kingsbury	16.5	147			
Low Poverty Area					
Mellette	9.4	24	Custer	5.1	11
Fall River	8.7	28	Stanley	0.0	0
Jones	8.6	12			
Clay	6.7	45			

The percentage ranges for rural farm poverty level families were 37.1% to 29.0% for counties in the major poverty category, 28.2% to 20.6% in the high poverty group, 19.8% to 10.2% in the moderate poverty classification, and 9.4% to 0.00% in the low poverty category.

Of the 67 counties, the numbers and percentages where the extent of poverty level rural farm families was classified as major, high, moderate, or low were 11 counties (16.4%) for major, 19 (28.4%) for high, 31 (46.2%) for moderate, and 6 (8.9%) for low.

The location by county of low income rural farm families by poverty category in South Dakota is shown in Figure 1.

In general, Table 2 and Figure 1 indicate some variation in the proportions of disadvantaged rural farm families resident in the counties of the State.

Low Income Rural Nonfarm Families. South Dakota, in 1970, reported 18.2% of the rural nonfarm families as families with incomes less than poverty level. Table 3 rank-orders counties according to the percentages of rural nonfarm families with incomes less than poverty level. The percentage of low income rural nonfarm families for each county ranged from 84.0% for Washabaugh County to 4.1% for Walworth.

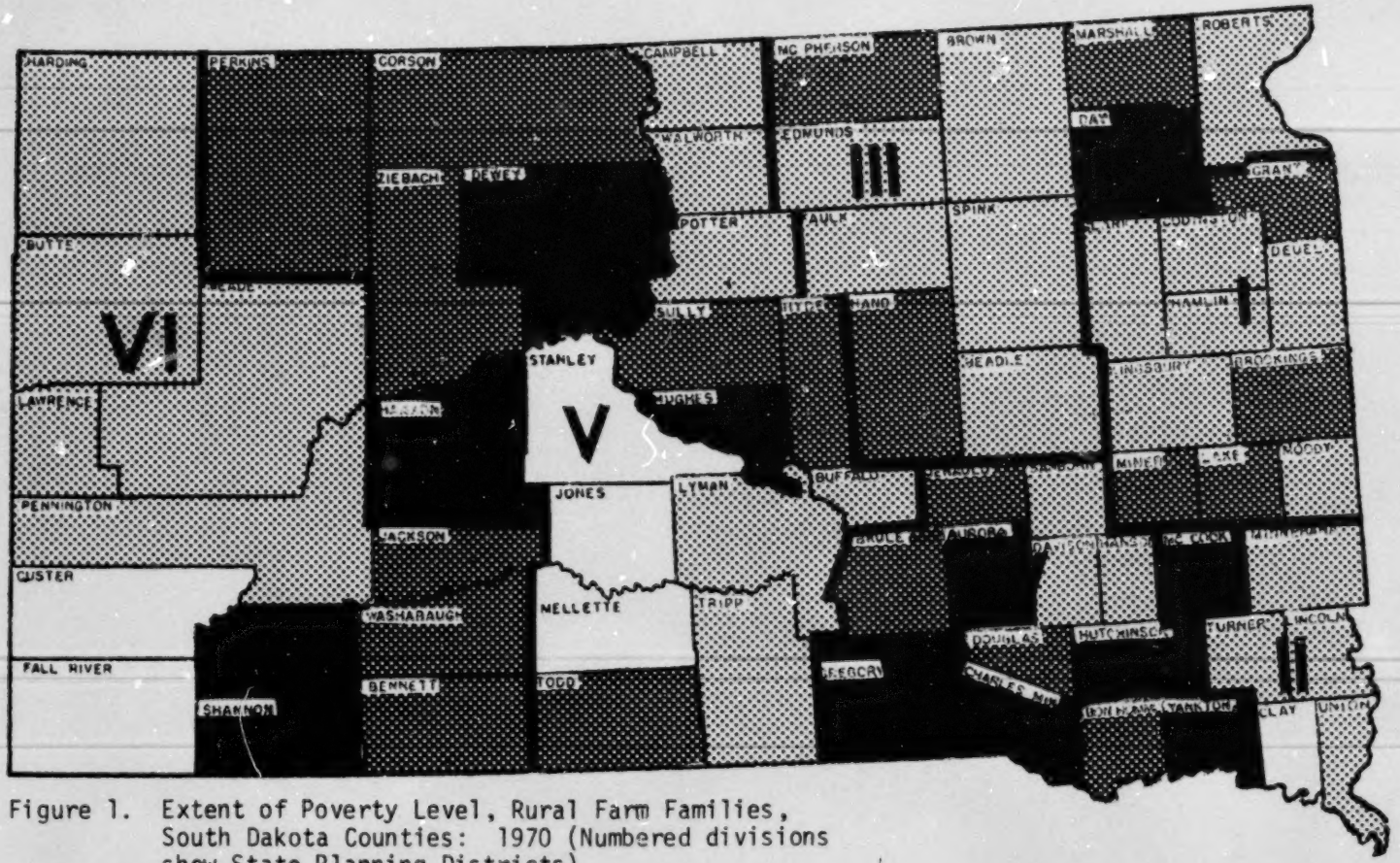

Figure 1. Extent of Poverty Level, Rural Farm Families, South Dakota Counties: 1970 (Numbered divisions show State Planning Districts)

Legend: Major
High
Moderate
Low

Table 3.--Number and Percentage of Rural Nonfarm Families with Incomes Less Than Poverty Level, Rank-ordered and Grouped by County According to Percentage

County	Percent	Number	County	Percent	Number
Major Poverty Area					
Washabaugh	84.0	100	Buffalo	58.2	113
Shannon	59.7	364	Ziebach	56.7	144
High Poverty Area					
Todd	45.7	464	Hutchinson	22.1	361
Mellette	39.8	138	McPherson	21.9	177
Corson	36.3	224	Grant	21.1	93
Dewey	32.1	232	Campbell	21.1	90
Brule	30.4	97	Turner	21.0	281
Bennett	28.7	126	Hanson	20.3	81
Sanborn	25.6	116	Deuel	19.8	126
Hyde	24.6	89	Jerauld	19.1	89
Harding	24.3	27	Sully	18.9	50
Charles Mix	24.1	345	McCook	18.4	169
Roberts	23.9	361	Gregory	18.3	211
Moderate Poverty Area					
Douglas	18.1	99	Butte	15.4	69
Lake	17.9	90	Codington	15.3	105
Hand	17.6	133	Union	15.2	213
Spink	17.2	110	Aurora	14.6	71
Clark	17.0	122	Miner	14.6	77
Jones	16.7	51	Tripp	14.1	36
Potter	16.6	120	Hamlin	13.9	107
Brown	16.4	222	Brookings	13.6	136
Marshall	16.2	134	Clay	13.5	46
Day	16.1	216	Stanley	13.4	62
Jackson	16.1	50	Lincoln	13.0	141
Faulk	16.0	87	Yankton	12.3	74
Beadle	16.0	94	Lawrence	12.3	175
Davison	15.8	74	Bon Homme	12.2	148
Moody	15.7	148	Pennington	12.0	314
Custer	15.5	158	Kingsbury	11.3	134
Edmunds	15.6	124			
Low Poverty Area					
Minnehaha	11.0	356	Hughes	7.9	23
Fall River	11.0	55	Perkins	7.6	48
Lyman	10.7	66	Walworth	4.1	18
Meade	10.2	74			
Haakon	8.7	36			

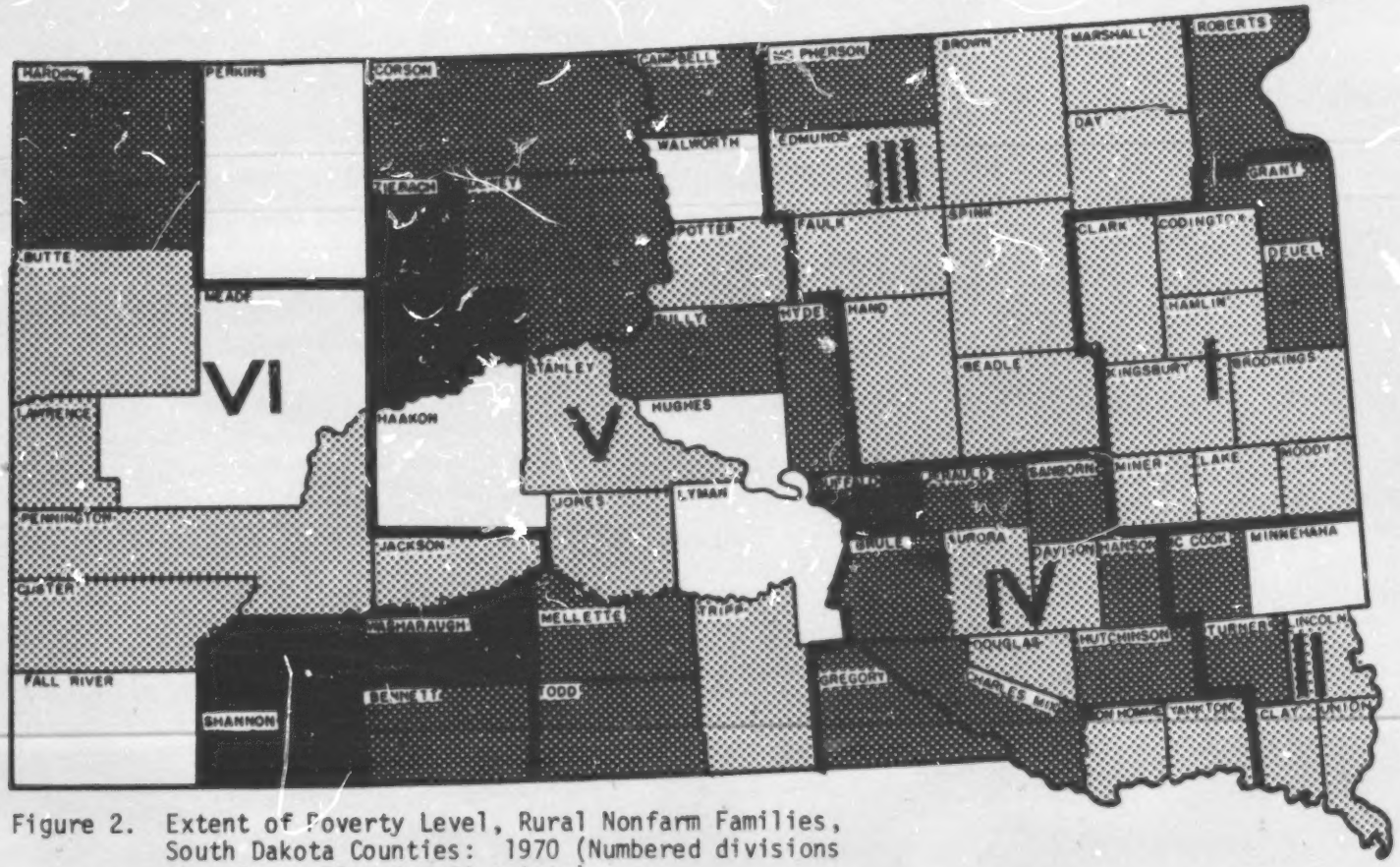

Figure 2. Extent of Poverty Level, Rural Nonfarm Families, South Dakota Counties: 1970 (Numbered divisions show State Planning Districts)

Legend: Major
High
Moderate
Low

The percentage ranges for rural nonfarm poverty level families were 84.0% to 56.7% for counties in the major poverty category, 45.7% to 18.3% in the high poverty group, 18.1% to 11.3% in the moderate poverty classification, and 11.1% to 4.1% in the low poverty category.

Of the 67 counties, the numbers and percentages where the extent of poverty level rural nonfarm families was classified as major, high, moderate, or low were four counties (6.0%) for major, 22 (32.8%) for high, 33 (49.3%) for moderate, and 8 (11.9%) for low.

The location by county of low income rural nonfarm families by poverty category in South Dakota is shown in Figure 2.

In general, Table 3 and Figure 2 indicate considerable variation in the proportions of disadvantaged rural nonfarm families resident in the counties of the State.

Low Income Urban Families. In 1970, 9.1% of urban families in South Dakota had incomes less than poverty level. Table 4 rank-orders counties according to the percentages of urban families having incomes less than poverty level. The percentage of low income urban families for each county with urban residents ranged from 13.4% for Shannon County to 0.5% for Union. Forty-two counties had no urban families with incomes below poverty level because the counties contained no urban places.

Table 4.--Number and Percentage of Urban Families with Incomes Less Than Poverty Level, Rank-ordered and Grouped by County According to Percentage

County	Percent	Number	County	Percent	Number
Major Poverty Area					
Shannon	13.4	199			
High Poverty Area					
Sully	10.7	60	Brule	9.3	55
Brookings	9.8	262			
Moderate Poverty Area					
Clay	8.8	238	Fall River	6.0	102
Walworth	8.8	169	Tripp	5.8	116
Brown	8.7	531	Minnehaha	5.7	1,327
Pennington	8.6	1,295	Codington	5.2	249
Lake	7.4	213	Yankton	5.2	212
Beadle	6.8	243	Butte	5.1	104
Davison	6.5	272	Roberts	4.7	136

Table 4 continued.

County	Percent	Number	County	Percent	Number
Low Poverty Area					
Grant	4.3	97	Hanson	0.0	0
Lawrence	3.9	168	Harding	0.0	0
Hughes	3.9	111	Hutchinson	0.0	0
Meade	3.7	131	Hyde	0.0	0
Spink	2.1	51	Jackson	0.0	0
Lincoln	1.4	42	Jerauld	0.0	0
Union	0.5	13	Jones	0.0	0
Aurora	0.0	0	Kingsbury	0.0	0
Bennett	0.0	0	Lyman	0.0	0
Bon Homme	0.0	0	McCook	0.0	0
Buffalo	0.0	0	McPherson	0.0	0
Campbell	0.0	0	Marshall	0.0	0
Charles Mix	0.0	0	Mellette	0.0	0
Clark	0.0	0	Miner	0.0	0
Corson	0.0	0	Moody	0.0	0
Custer	0.0	0	Perkins	0.0	0
Day	0.0	0	Potter	0.0	0
Deuel	0.0	0	Sanborn	0.0	0
Dewey	0.0	0	Stanley	0.0	0
Douglas	0.0	0	Todd	0.0	0
Edmunds	0.0	0	Turner	0.0	0
Faulk	0.0	0	Washabaugh	0.0	0
Gregory	0.0	0	Ziebach	0.0	0
Haakon	0.0	0			
Hamlin	0.0	0			
Hand	0.0	0			

The percentage ranges for urban poverty level families were 13.4% for Shannon County, the only one classified as a major poverty area for urban families, 10.7% to 9.3% in the high poverty group, 8.8% to 4.7% in the moderate poverty category, and 4.3% to 0.5% in the low poverty classification.

Of the 67 counties, the numbers and percentages where the extent of poverty level urban families was classified as major, high, moderate, or low were one county (1.5%) for major, three (3.4%) for high, 14 (20.9%) for moderate, and 49 (73.1%) for low.

The location by county of low income urban families by poverty category in South Dakota is shown in Figure 3.

In general, Table 4 and Figure 3 indicate that almost three-fourths of the counties in the State have moderate to low proportions of urban family disadvantagement.

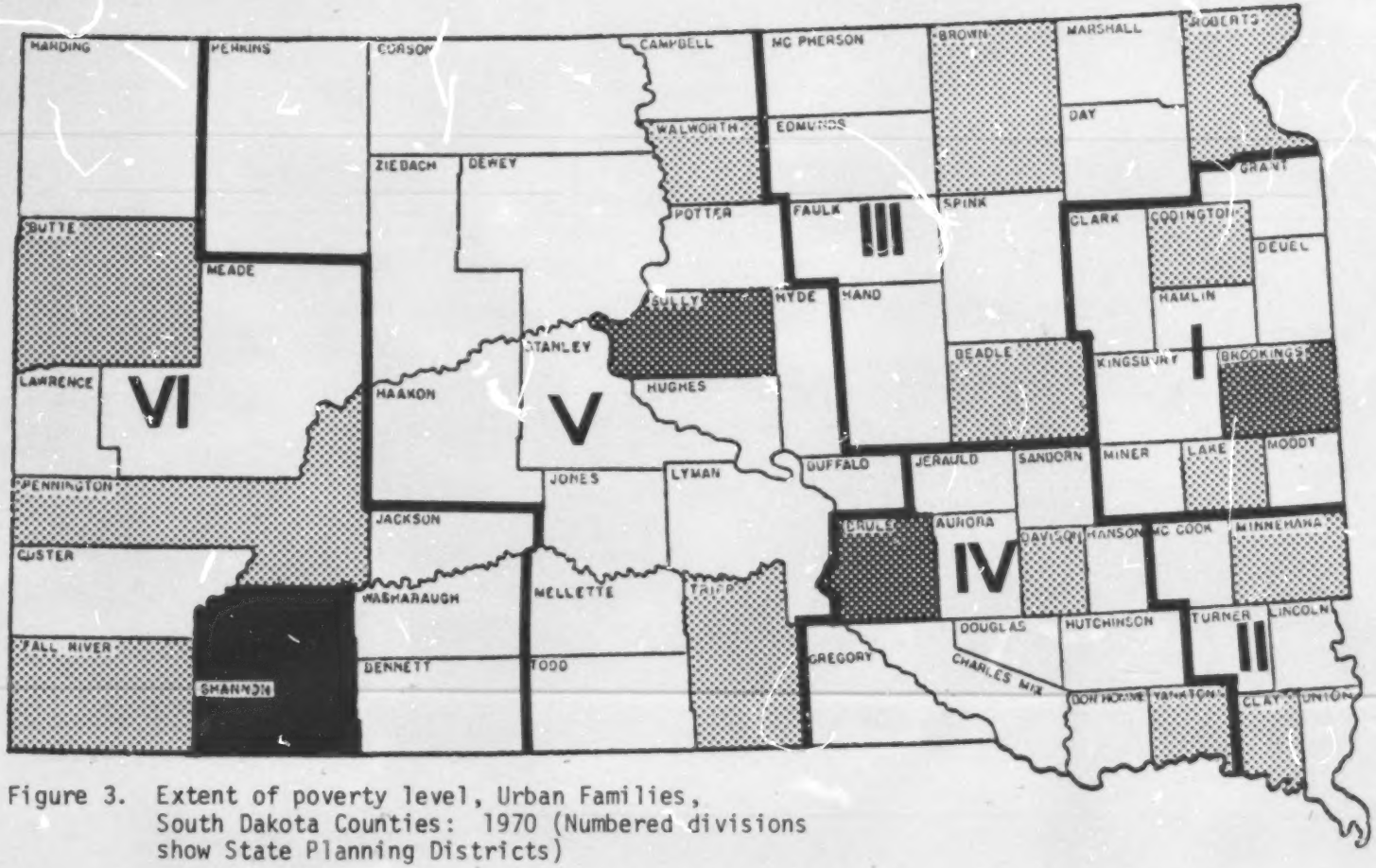

Figure 3. Extent of poverty level, Urban Families, South Dakota Counties: 1970 (Numbered divisions show State Planning Districts)

Legend: Major

High

Moderate

Low

Low Income Families: Total County. South Dakota, in 1970, had 14.8% of the total families in the State with incomes less than poverty level. Table 5 rank-orders counties according to the percentages of total families having incomes less than poverty level. The percentage of low income families for each county as a whole (farm, nonfarm and rural residence) ranged from 49.3% for Washabaugh County to 6.8% for Hughes.

Table 5.--Number and Percentage of Rural Farm, Rural Nonfarm, and Urban Families with Incomes Less Than Poverty Level, Rank-ordered and Grouped by County According to Percentage

County	Percent	Number	County	Percent	Number
Major Poverty Area					
Washabaugh	49.3	149	Todd	40.8	529
Shannon	44.2	658	Buffalo	38.8	137
Ziebach	41.8	223	Corson	32.4	337
High Poverty Area					
Dewey	31.8	344	Hand	19.3	276
Charles Mix	27.8	675	Turner	19.0	497
Bennett	26.9	188	Hanson	18.7	177
Mellette	26.9	162	Campbell	18.7	139
Hyde	25.4	157	Deuel	18.4	278
Hutchinson	24.9	679	Miner	17.9	208
McCook	24.6	455	Haakon	17.3	121
Day	22.9	516	Lake	17.1	490
Gregory	22.5	420	Moody	16.8	310
Jerauld	22.4	191	Grant	16.7	376
Aurora	22.3	225	Edmunds	16.7	237
McPherson	22.0	294	Bon Homme	16.5	349
Sanborn	21.4	212	Clark	16.3	252
Sully	21.4	120	Potter	16.2	175
Douglas	20.9	237	Union	15.6	394
Brule	20.6	295	Faulk	15.6	149
Harding	20.5	91	Tripp	15.4	309
Roberts	19.9	576	Jackson	15.3	65
Marshall	19.7	292			
Moderate Poverty Area					
Lincoln	14.4	442	Spink	12.9	320
Perkins	14.4	174	Walworth	12.9	248
Yankton	14.2	575	Hamlin	12.4	172
Jones	14.2	63	Clay	12.1	329
Custer	13.8	169	Lyman	12.0	120
Butte	13.6	276	Pennington	11.3	1,706

Table 5 continued.

County	Percent	Number	County	Percent	Number
Brookings	13.5	659	Fall River	10.8	185
Kingsbury	13.5	281			
Low Poverty Area					
Brown	10.6	921	Codington	9.1	434
Davison	10.5	442	Meade	8.4	294
Stanley	10.3	62	Minnehaha	8.2	1,909
Beadle	10.2	533	Hughes	6.8	194
Lawrence	9.7	41[illegible]			

The percentage ranges for poverty level families for the county as a whole were 49.3% to 32.4% for counties in the major poverty category, 31.8% to 15.3% in the high poverty group, 14.4% to 10.8% in the moderate poverty classification, and 10.6% to 6.8% in the low poverty category.

Of the 67 counties, the numbers and percentages where the extent of poverty level among total county families was classified as major, high, moderate, or low were six counties (9.0%) for major, 37 (55.2%) for high, 15 (22.3%) for moderate, and nine (13.4%) for low.

The location by county of low income families by poverty category for the county as a whole in South Dakota is shown in Figure 4.

In general, Table 5 and Figure 4 show nearly two-thirds of the counties in South Dakota to be characterized as areas of major or high disadvantagement, when classified according to the proportion of disadvantaged families for the county as a whole.

The number and percent of disadvantaged families are summarized for the State by residence and poverty level in Table 6. Of the families classified in the major poverty category, over 70% were rural farm. Fifty-nine percent of the families in the high poverty category were rural nonfarm, and the largest portion (41%) of the moderate were urban. Low poverty level families were concentrated among rural nonfarm (48%) and urban (44%) sectors. Finally, 73% of all poverty level families were rural farm or nonfarm.

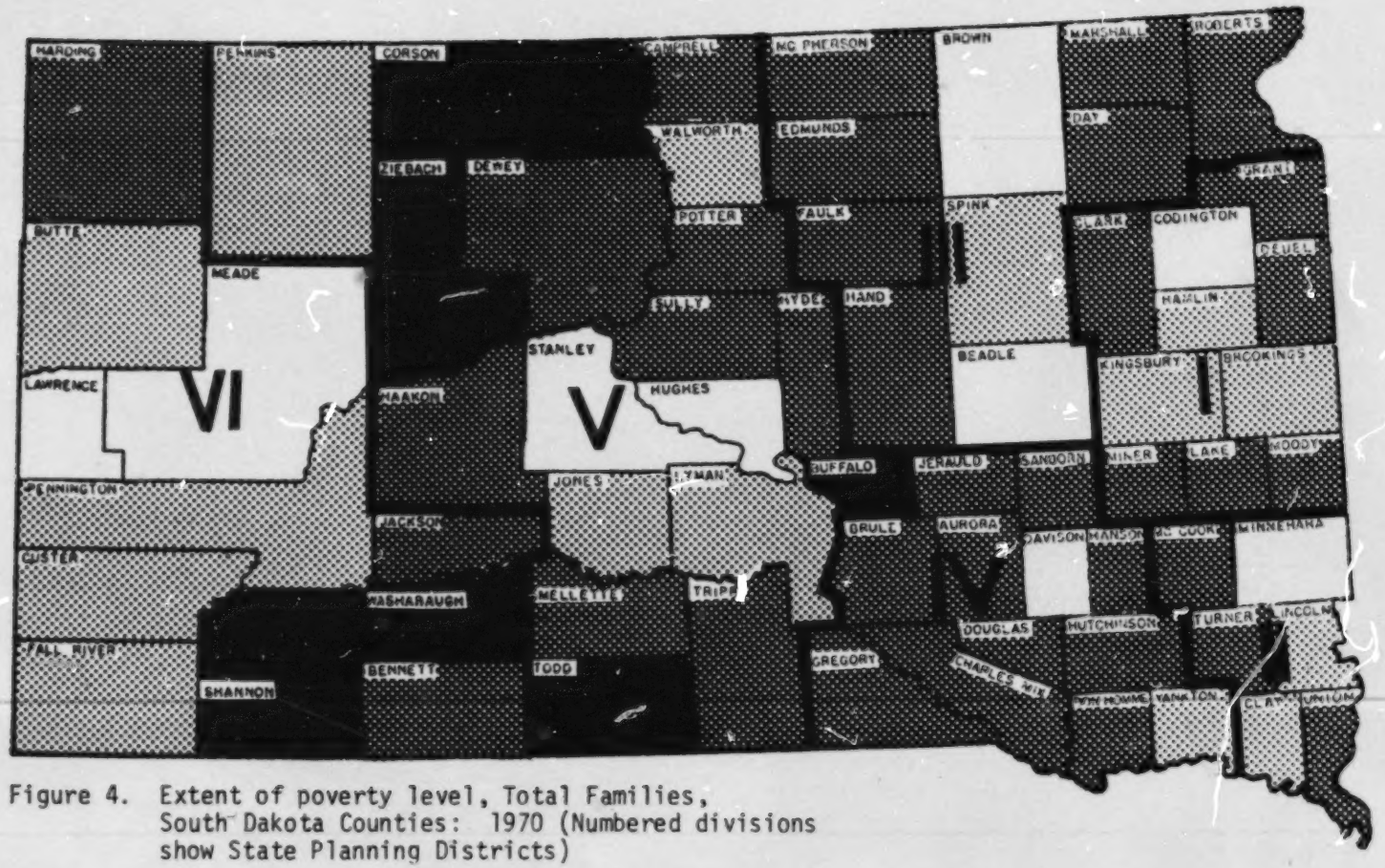

Figure 4. Extent of poverty level, Total Families, South Dakota Counties: 1970 (Numbered divisions show State Planning Districts)

Legend: Major

High

Moderate

Low

Table 6.--Disadvantaged Families by Residence, South Dakota: 1970

Poverty Level	Family Residence							
	Rural farm		Rural nonfarm		Urban		State total	
	No.	%	No.	%	No.	%	No.	%
Major	2,241	9.3	721	3.0	199	0.8	3,161	13.1
High	2,399	10.0	3,947	16.4	377	1.6	6,723	27.9
Moderate	3,666	15.2	3,940	16.3	5,207	21.6	12,813	53.2
Low	120	0.5	676	2.8	613	2.5	1,409	5.8
Total	8,426	35.0	9,284	38.5	5,396	26.5	24,106	100.0

These data indicate that family disadvantagement in South Dakota is largely concentrated among rural peoples. Furthermore, rural families tend to have higher levels of disadvantagement than urban.

Summary. During 1970, the proportions of families in South Dakota with incomes less than poverty level were greatest for rural farm residents (20.1%) and lowest for urban (9.1%). The proportion of low income rural nonfarm families was lower than rural farm, with 18.2%.

Over half (55.2%) of the counties in the State were classified as areas where the proportions of poverty level families for the county as a whole were high, and 22.3% of the counties were classified as moderate.

The proportions of low income rural farm families varied by county from 37.1% to 0.0%. State Planning Districts III and V showed greater numbers of counties with high proportions of low income rural farm families.

The extent of low income rural nonfarm families varied considerably. Four counties (Washabaugh, Shannon, Buffalo and Ziebach) had proportions ranging from 84.0% to 56.7%. Again, Districts III and V showed greater numbers of counties with high proportions of low income rural nonfarm families.

Only Shannon County, with 13.4%, was classified as an area where a major concentration of low income families prevailed among urban residents. The area centered in the city of Pine Ridge. Generally, the proportions of low income urban families for counties were below 10%. Classification of counties according to low income urban families suggests that the proportions of disadvantaged families are not extensive in urban areas; however, 42 of the counties labeled as low in the urban category are classified as such only because they had no urban residents in 1970.

Poverty among families in South Dakota varies substantially from county to county and by type of residence. Furthermore, family disadvantagement in South Dakota is largely concentrated among rural peoples.

Explanations for Poverty

Identifying where low income families in 1970 were located in South Dakota can be helpful to agencies concerned with developing and administering programs in the State designed to assist such families. Of additional help would be determining those socioeconomic factors that explain why some counties have greater proportions of families with incomes below poverty level than others.

The second objective of this study was to determine what socioeconomic factors help explain observed differences by county in the number of families with incomes below poverty level in South Dakota. Sixty-two characteristics, measuring county population by age and sex, numbers of males and females employed by occupational categories, income, and educational and marital status for the rural farm, rural nonfarm, and urban segments of the population, were selected as possible factors that would explain the variations in the total number of rural farm, rural nonfarm and urban families with incomes less than poverty level in each county.[3]

Null Hypothesis. To test the association hypothesized between the sixty-two independent and the dependent variables, the multiple independent variables X_1, X_2, X_3, . . . X_{62} were defined as a set, and the following null hypothesis was formulated:

The set of independent variables will not significantly help explain the variation observed in the number of rural farm, rural nonfarm, and urban families with incomes less than poverty level (Y_1).

Statistical Findings. Appendix II reports the statistical findings relative to the preceding hypothesis. Stated descriptively, it was found that South Dakota counties with higher proportions of families in the county as a whole with incomes less than poverty level were characterized by:

1. Greater numbers of families with female heads.
2. Greater numbers of males employed in the county as a whole as farmers and farm managers.
3. Smaller nonwhite populations.
4. Smaller numbers of rural farm males, 16 and over, employed as managers and administrators in nonfarm employment sectors.
5. Smaller numbers of rural nonfarm females, 16 and over, employed as service workers in occupational sectors other than private households.

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[3] See Appendix I for a specification of the variables. Stepwise least squares multiple regression analysis was used for the purpose of testing the association between the sets of independent variables and the dependent variables. Utilization of this technique yielded in rank-order fashion the independent variables and their association with each dependent variable. The association between the variables was tested at the 0.05 level of significance.

6. Smaller numbers of males employed in the county as a whole as professional, technical, and kindred workers.

7. Greater numbers of rural nonfarm males, 16 and over, employed as farm workers and unpaid family workers.

8. Lower median family income for the county as a whole.

9. Smaller number of males employed in the county as a whole as service workers, including private households.

10. Smaller numbers of rural farm males, 16 and over, employed as sales workers.

Furthermore, larger proportions of low income families were found in:

1. Rural farm areas where employment for males in managerial, administrative, and sales positions were low.

2. Rural nonfarm areas where male jobs as farm laboring sector and female job opportunities as service workers were high.

3. Those counties with low median family incomes and where employment for males in the professional, technical, and kindred workers sector was low.

Low Income and Migration

At the beginning of this study, the question was raised as to whether the factors that help explain the incidence of families with below poverty level incomes also help explain the differences in the extent of net in- or out-migration for South Dakota counties from 1960 to 1970.

To answer that question, the 10 socioeconomic factors identified in the preceding section of this report as significantly helping to explain the numbers of low income families by county in the State[4] were tested to determine whether they also explained net in- or out-migration.

Null Hypothesis. The 10 multiple independent variables found to explain significantly the incidence of families with below poverty level incomes were defined as a set, and the following null hypothesis was formulated:

The set of independent variables will not help explain significantly the variation observed in the total plus or minus number of net-migrants for each county from 1960 to 1970.

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[4] Again, stepwise least squares multiple regression was used for testing the hypothesized association. The specified significance level was 0.05.

Statistical Findings. Appendix III reports the statistical findings relative to the preceding hypothesis. Stated descriptively, it was found that South Dakota counties that experienced higher net out-migration from 1960 to 1970 were characterized by:

1. Greater numbers of families with female heads.
2. Greater numbers of males employed in the country as a whole as farmers and farm managers.
3. Greater numbers of nonwhites.
4. Greater numbers of rural nonfarm females, 16 and over, employed as service workers in occupational sectors other than private households.
5. Lower median family income for the county as a whole.
6. Greater numbers of males employed in the county as a whole as professional, technical, and kindred workers.

CONCLUSIONS AND IMPLICATIONS

Conclusions

The variations observed in the number and location of disadvantaged families in South Dakota in 1970 suggest the following conclusions for Objective One:

1. Proportionately, the incidence of disadvantaged families is largest within rural farm and rural nonfarm areas than within urban areas.

2. Family disadvantagement for the county as a whole prevails in most counties in South Dakota.

3. Proportionately, disadvantagement by county has a wider range of variation among rural nonfarm families than among rural farm families or urban families.

Based on the findings relative to the statistical tests to determine the association between the extent of disadvantagement and selected socioeconomic factors, it is concluded that:

1. Family disadvantagement in 1970 for counties in South Dakota was primarily a consequence of high proportions of families with a female head.

2. Family disadvantagement was also associated with concentrations in the male labor force of farm managers and operatives.

The findings relative to Objective Three -- concerned with predicting migration based on factors associated with disadvantagement -- suggest that high out-migration in South Dakota from 1960 to 1970 was the consequence of:

1. High proportions of families with female heads.

2. Low employment for rural farm males either in high income employment sectors or as farm managers and operators.

Implications

The findings and conclusions raise questions regarding the association of disadvantagement with migration in South Dakota. They also suggest some factors to be considered for policy, planning, and programming. Some major implications are:

1. In that family disadvantagement and out-migration are associated, continued loss of population due to disadvantagement will occur. To offset this out-migration, additional employment opportunities need to be developed, especially in areas of major disadvantagement. Farming and agriculturally related opportunities for rural males should be maximized in order to retain rural farm youth.

2. Additional employment opportunities for women are needed if the female heads of disadvantaged families are to find work. Manpower programs may need to concentrate more on training mechanisms and vocational objectives directed at females, particularly those who are heads of households. Such programs may have to offer concurrent support in related areas, such as providing child-care facilities at training centers.

3. Development of employment opportunities for the nonfarm population is essential in order to reduce disadvantagement and out-migration. State and local programs should improve employment opportunities for female heads of household, diversify training and employment for males in all job sectors and develop agriculturally related businesses.

4. Counties with large portions of their population under 18 years of age need to provide young people employment opportunities, occupational models and vocational counseling appropriate to a rural area.

5. Counties experiencing a decline in the number of farm operators should anticipate further disadvantagement due to lessening need for workers in those occupations that support agriculture.

6. Counties experiencing increases in the number of disadvantaged families can anticipate greater demand for programs requiring social workers, community development specialists, and child-care center supervisors.

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APPENDIX I

The variables selected to test the association between selected socio-economic factors and the extent of low income families for the county as a whole were:

1. The Dependent Variable

The dependent variable was the number of rural farm, nonfarm, and urban families with incomes less than poverty level (Y_1).

2. Independent Variables

The following were designated as independent variables for Selection One:

1. Total county population
2. Total county nonwhite population
3. Total county population under 18 years
4. Total county population 65 years and over
5. Total number of males for the county as a whole employed as professional, technical, and kindred workers
6. Total number of males for the county as a whole employed as managers and administrators, except farm
7. Total number of males for the county as a whole employed as sales workers
8. Total number of males for the county as a whole employed as clerical and kindred workers
9. Total number of males for the county as a whole employed as craftsmen, foremen, and kindred workers
10. Total number of males for the county as a whole employed as operatives, including transport
11. Total number of males for the county as a whole employed as laborers, except farm
12. Total number of males for the county as a whole employed as farmers and farm mangers
13. Total number of males for the county as a whole employed as farm laborers and farm foremen
14. Total number of males for the county as a whole employed as service workers, including private household
15. Total number of females for the county as a whole employed as clerical and kindred workers
16. Total number of females for the county as a whole employed as operatives, including transport
17. Total number of females for the county as a whole employed as other blue collar workers
18. Total number of females for the county as a whole employed as farm laborers and farm foremen
19. Total number of females for the county as a whole employed as service workers, except private households
20. Total number of females for the county as a whole employed as private household workers

21. Median family income for county as a whole
22. Number of families with female heads for county as a whole
23. Total rural farm males, 16 and over, employed as professional, technical, and kindred workers
24. Total rural farm males, 16 and over, employed as managers and administrators, except farm
25. Total rural farm males, 16 and over, employed as sales workers
26. Total rural farm males, 16 and over, employed as clerical and kindred workers
27. Total rural farm males, 16 and over, employed as craftsmen, foremen, and kindred workers
28. Total rural farm males, 16 and over, employed as operatives, including transport
29. Total rural farm males, 16 and over, employed as laborers, except farm
30. Total rural farm males, 16 and over, employed as farmers and farm managers
31. Total rural farm males, 16 and over, employed as farm laborers and unpaid family workers
32. Total rural farm males, 16 and over, employed as farm laborers, except unpaid farm laborers
33. Total rural farm males, 16 and over, employed as service workers, including private households
34. Total rural farm females, 16 and over, employed as clerical and kindred workers
35. Total rural farm females, 16 and over, employed as operatives, including transport
36. Total rural farm females, 16 and over, employed as other blue collar workers
37. Total rural farm females, 16 and over, employed as farm laborers, and unpaid family workers
38. Total rural farm females, 16 and over, employed as farm laborers, except unpaid and farm foremen
39. Total rural farm females, 16 and over, employed as service workers, except private household
40. Total rural farm females, 16 and over, employed as private household workers
41. Median rural farm family income
42. Total number of rural farm families with female head
43. Total rural nonfarm males, 16 and over, employed as professional, technical and kindred workers
44. Total rural nonfarm males, 16 and over, employed as managers and administrators, except farm
45. Total rural nonfarm males, 16 and over, employed as sales workers
46. Total rural nonfarm males, 16 and over, employed as clerical and kindred workers
47. Total rural nonfarm males, 16 and over, employed as craftsmen, foremen, and kindred workers
48. Total rural nonfarm males, 16 and over, employed as operatives, including transport
49. Total rural nonfarm males, 16 and over, employed as farmers and farm managers
50. Total rural nonfarm males, 16 and over, employed as laborers, except farm

51. Total rural nonfarm males, 16 and over, employed as farm laborers and unpaid family workers
52. Total rural nonfarm males, 16 and over, employed as farm laborers except unpaid farm laborers
53. Total rural nonfarm males, 16 and over, employed as service workers, including private household
54. Total rural nonfarm females, 16 and over, employed as clerical and kindred workers
55. Total rural nonfarm females, 16 and over, employed as operatives, including transport
56. Total rural nonfarm females, 16 and over, employed as other blue collar workers
57. Total rural nonfarm females, 16 and over, employed as farm laborers, unpaid family workers
58. Total rural nonfarm females, 16 and over, employed as farm laborers, except unpaid and farm foremen
59. Total rural nonfarm females, 16 and over, employed as service workers, except private households
60. Total rural nonfarm females, 16 and over, employed as private household workers
61. Median rural nonfarm family income
62. Total number of rural nonfarm families with female head

APPENDIX II

Sums of Squares and Proportion of Variance Accounted for by the Significant Independent Variables as Entered into the Equation

Independent Variables	Sum of Squares Accounted For	Proportion of Variation Explained	Cumulative Proportion of Variation Explained	Regression Coefficient for Significant Variables	Y Intercept
X_{22}	5478147.925	0.855	0.855	0.051	322.03017
X_{12}	305043.770	0.048	0.902	0.141	
X_{2}	255241.670	0.040	0.942	-0.054	
X_{24}	101947.384	0.016	0.958	-1.123	
X_{59}	35109.311	0.005	0.964	-0.020	
X_{5}	40644.852	0.006	0.970	-0.094	
X_{51}	29813.134	0.005	0.975	0.656	
X_{21}	22397.687	0.004	0.978	-0.037	
X_{14}	25803.720	0.004	0.982	-1.253	
X_{25}	15262.796	0.002	0.984	-1.012	

APPENDIX III

Sums of Squares and Proportion of Variance Accounted for by the Significant Independent Variables as Entered into the Equation

Independent Variables	Sum of Squares Accounted For	Proportion of Variation Explained	Cumulative Proportion of Variation Explained	Regression Coefficient for Significant Variables	Y Intercept
X_{22}	5478147.92459	0.8548305	0.8548305	0.49575	178.83322
X_{12}	305043.16959	0.047600	0.9024305	0.24101	
X_{2}	255241.66969	0.0398288	0.9422593	0.05698	
X_{59}	57470.15099	0.0089678	0.9512271	0.50045	
X_{21}	32643.14323	0.0050937	0.9563208	-0.03065	
X_{5}	33131.85163	0.005170	0.9614908	0.11701	

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